
REMARKS

Applicant has carefully reviewed and considered the Office Action mailed on July 2, 2003 and the references cited therewith. Claims 1 and 12 are currently amended.

Rejections Under 35 U.S.C. § 103(a)

Claims 1-4, 8-11 and 36 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Bell (5,271,980) in view of Barito et al. (4,636,415). Upon review, it is clear that Bell is directed to precisely the type of conventional insulation utilizing vacuum as an insulation resource, see the discussion of Multilayer Insulation (MLI) on page 4 of the specification.

In comparison to MLI as well as to vacuumized insulation in Bell, the present invention is specifically designed to work at ambient pressure. Because no vacuum is drawn, the insulation is readily able to conform to the shape of the object being protected. While Bell states it is flexible, the mere fact that a vacuum is created severely limits the ability of the insulation to alter its shape. While the panel may have some give, the vacuum prevents the panel from being folded as may be required to conform to the object's exterior shape.

Turning again to Bell, it is stated in the Office Action that Bell teaches a flexible evacuated insulating panel including a first impermeable layer 52, identified as the reflection layer, a second impermeable layer 62, identified as the carrier layer, with an evacuated high porosity layer therebetween, identified as the fill layer/part of spacer layer. As best understood, each of the impermeable layers 52 and 62 includes metallic sublayers. In comparison, the presently claimed invention clearly sets forth that the reflection layer is formed of metal or metalized foil while the carrier layer is formed of low conductivity materials such as microglass, paper, fabric, polyester fabric and Q- fiber fabric. As stated on page 12 of the specification, "the material of carrier 130 should have low loft, and contain small fibers or microfibers to minimize solid conduction of heat. Bell in no way teaches or suggests a carrier layer formed of a low thermal conductivity material. In fact, Bell teaches the opposite, that the carrier layer be include a high conductivity metal sublayer.

The secondary patent Barito et al. discloses the use of powdered silica in an insulation material. There is no suggestion in Barito of employing the specific layered construction recited in claim 1. In particular, Barito does not suggest a metalized foil reflection layer separated from a low conductivity carrier layer as presently described and claimed. For these reasons, it is respectfully asserted that because claims 1-4, 8-11 and 36 are unobvious over the cited patents Bell and Barito et al., the rejection of these claims under 35 U.S.C. 103(a) should be withdrawn.

Claims 12, 14-16 and 37 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Bell in view of Barito et al. and Casey (4,878,258). Casey is cited as disclosing a plurality of similarly constructed flexible insulating layers. There is no teaching or even suggestion in Casey of the specific structure of the insulation system as recited in independent claim 12. For this reason, along with the reasons discussed above, it is respectfully requested that the rejection of claims 12, 14-16 and 37 under 35 U.S.C. 103(a) be withdrawn.

Claim 13 stands rejected under 35 U.S.C. 103(a) as being unpatentable over Bell in view of Barito et al., Casey and Karpinsky (4,304,824). Karpinsky is cited as the use of an intermediate strip in the use of flexible modular insulation. There is no teaching or suggestion in Karpinsky of utilizing the multilayer insulation construction employing reflection layers of metal or metalized foils and carrier layers of low thermal conductivity materials. For this reason, it is respectfully requested that the rejection of claim 13 under 35 U.S.C. 103(a) be withdrawn.

CONCLUSION

Claims 1 and 12 are currently amended. In view of the above remarks, Applicant respectfully submits that the remaining claims 1-4, 8, 10-16, 36 and 37 are in condition for allowance and requests reconsideration of the application and allowance of the remaining claims.

The Examiner is invited to contact Applicant's Representatives at direct dial (321) 867-7214 if there are any questions regarding this Response or if prosecution of this application may be assisted thereby.

Any additional charges necessary to prosecute this application are authorized to be drawn against Deposit Account 14-0116.

Respectfully submitted,

Date: 05/16/2003

Randall M. Heald

Randall M. Heald
Patent Counsel, Kennedy Space Center
Reg. No. 28,561

CERTIFICATE OF MAILING

I certify that this correspondence will be deposited with the United States Postal Service as first class mail with proper postage affixed in an envelope addressed to:
"Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450" on the date below.

Date: 10/16/2003

Carol Anne Dunn

Carol Anne Dunn
Paralegal Specialist